



**Risk Factors for  
Musculoskeletal Disorders  
and the Prevention Among  
Home Health Care Workers**

Arun Garg, Ph.D., C.P.E.  
Center for Ergonomics  
University of Wisconsin-Milwaukee



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**Presenter Disclosures**

Arun Garg

(1) **The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:**

No relationships to disclose



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**Home Health Care**

1. 20,000 agencies deliver home care services to 7.6 million individuals with acute illness, long-term health conditions, permanent disability or terminal illness. (Chalupka, et al. 2008)
2. Costs of injuries & illnesses to nursing aides & orderlies = 2.2 billion  
Home health care =6%
3. One of the fastest-growing segment.



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## Objectives

- Identify and quantify hazards to home health care workers.
- Primary emphasis-patient handling tasks.
- Develop strategies to reduce these hazards.



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## Study Design

- Multi-center cross-sectional study of HHCWs in USA and Canada

1. Questionnaire (n = 883)  
Participation Rate: Attendees = 98.5%  
Overall = 75%
2. Home visits (> 100)
3. Laboratory simulation of selected lifting & transferring tasks
4. Interventions



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## Home Health Care Hazards

<ol style="list-style-type: none"> <li>1. Assaults/Violence (Hegmann &amp; Garg 2004, Canton et al 2009)</li> <li>2. Animal bites</li> <li>3. Sharps (Beltzmann et al 2000, Hegmann &amp; Garg 2004, Haiduvven 2004, Alamgir et al. 2008)</li> <li>4. Exposure to infestation &amp; infectious disease (Hegmann &amp; Garg 2004)</li> <li>5. Motor vehicle accidents (13%) (Meyer et al. 1999, Hegmann Garg 2004)</li> <li>6. Second Hand Smoke (Hegmann &amp; Garg 2004)</li> </ol>	<ol style="list-style-type: none"> <li>7. Overexertion Injuries (63%) Back, shoulder (Myers et al 1993, Ono et al. 1995, Meyer et al 1999, Zeytinoglu et al 2000, Leff et al. 2000, Galmisky et al. 2001, Hegmann &amp; Garg 2004, Homeiz et al 2004, Hartvigsen et al. 2005).</li> <li>Risk Factors               <ol style="list-style-type: none"> <li>a) Forceful exertion (Lifting &amp; moving patients)</li> <li>b) Awkward postures</li> </ol> </li> <li>8. Slips and Falls (Meyer et al 1999, Hegmann &amp; Garg 2004)</li> </ol>
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### Patients

- Most patients either do not bear weight or partially bear weight (85.1%)
- Some suffer from stroke, paralysis, Alzheimer' s/ dementias
- They can be Uncooperative, Combative and or assaultive
- Avg. weight 73 kg (22-195 kg)



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### Major Health Issues

1. LBP (49%)
2. Neck pain (32%)
3. Shoulder pain (31%)
4. More than 50% with history of back problems, sciatica, degenerative spine disease and/or fracture in back bone.



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### % of HHCWs Rating Transfers as Somewhat Hard, Hard or Very Hard on LB

• Lift Patient from Floor	71%
• Lift/Reposition in Bed	55%
• Patient Care in Bed	54%
• Bed to/from WC	51%
• Toilet to/from WC	48%
• Dressing Patient in Bed	44%
• Into & Out of Bathtub	41%
• Reposition in WC	38%
• Make Occupied Beds	38%
• Change diapers	33%
• Moving HC Supplies	20%
• Assist Patient in Stairs	16%



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### HHCWs- Injuries More Expensive

(Meyer & Muntaner 1999)

Injury	Nursing Home	Hospital	HHC
Incidence rate/100 workers	13.2	4.6	5.2
Mean days lost	18	4	44

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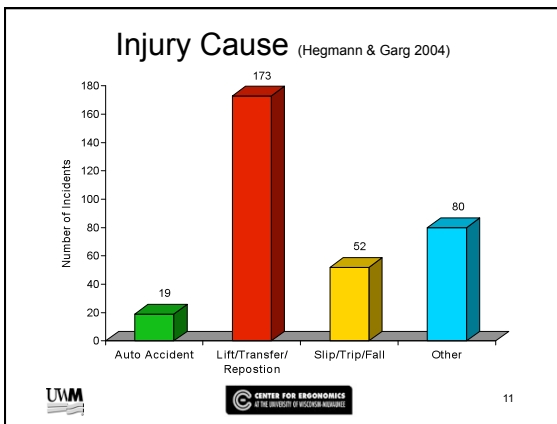
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### Unsafe Environment for Patient Care & Patient Transfer

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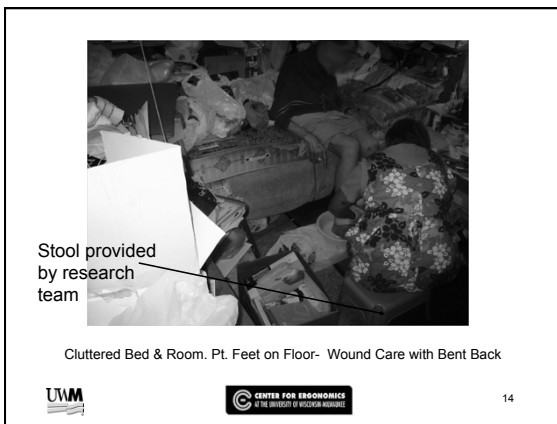
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## Patient Transfer and Patient Care Hazards



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Teenage girl:  
Parents & HHC Workers-  
No Hoist



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Bathing & Dressing



Wound care in chair



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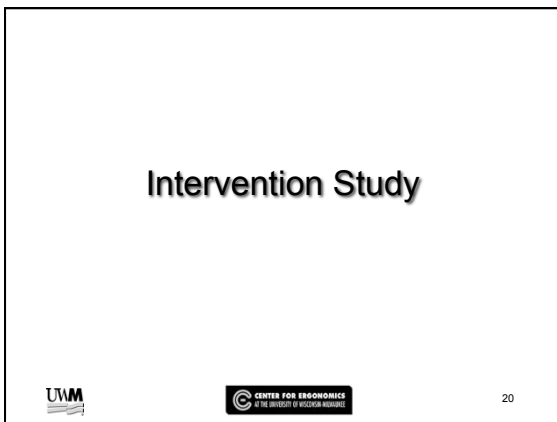
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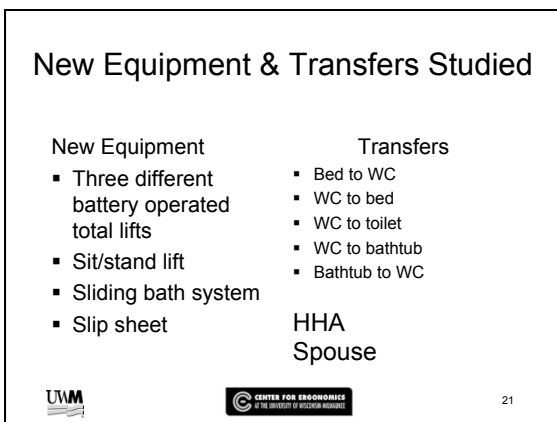
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### Training

- PI trained the OTs and PTs in one three-hour session
- OTs and PTs trained HHAs



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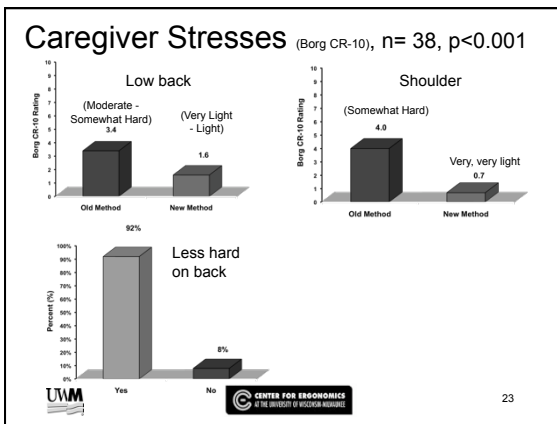
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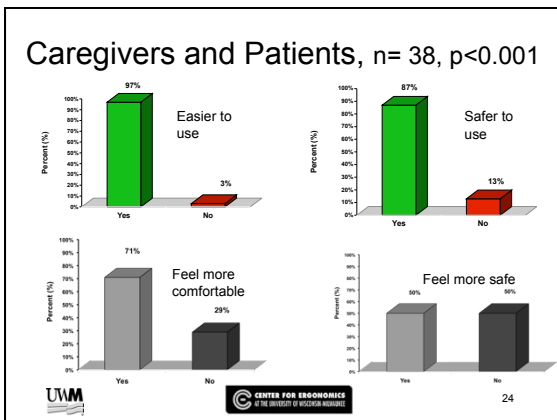
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Other Helpful  
Observations



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Raised Chair      Electric Powered Tilting Chair

Inaccessible Shower      Accessible Shower



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Sink Accessible with a WC

Shower



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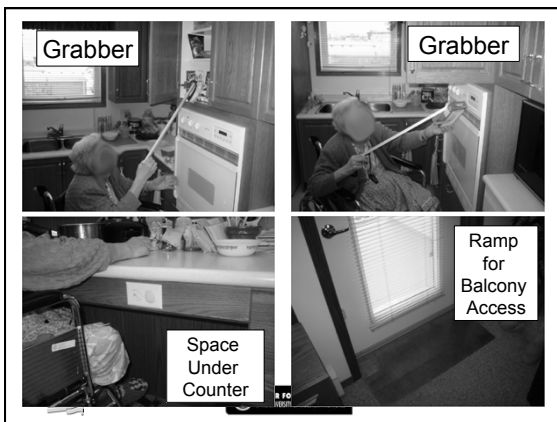
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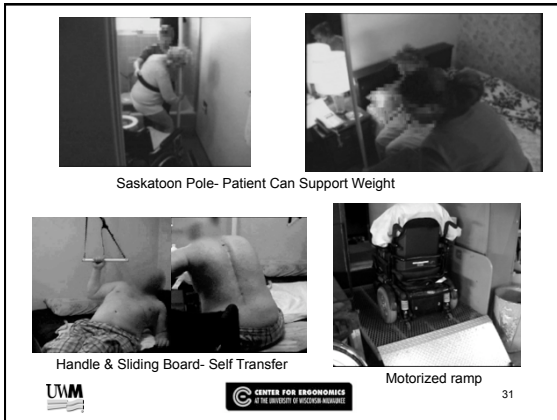
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